2004 GALVESTON BAY INVASIVE SPECIES RISK ASSESSMENT
INVASIVE SPECIES SUMMARY
Created by: Environmental Institute of Houston, University of Houston-Clear Lake
and the Houston Advanced Research Center

Common Name: Nutria, coypu, coypu rat, swamp beaver, nutria rat

Latin Name: *Myocastor coypus*

Category: Aquatic Animal

Place of Origin: Native to southern Brazil, Bolivia, Paraguay, Uruguay, Argentina, and Chile
http://www.gsmfc.org/nis/nis/Myocastor_coypus.html (Accessed 19 March 2003)

Place of Introduction: "Nutria were first introduced into the Gulf of Mexico near New Orleans in the early 1930's. It's believed that all the individuals released during this first introduction were recaptured by trappers. In 1938, between 12 and 20 nutria imported from Argentina were introduced into Avery Island, Louisiana by Tabasco tycoon E.A. McIlhenny (Griffo, 1957; Lowery, 1974; Jackson, 1994; Trillin, 1995). These reproduced prolifically. Many escaped from captivity or were released, and rapidly multiplied in the wild. The first specimens of nutria appeared in the Louisiana fur market during the 1943-44 season. In the 1945-46 season the number of nutria trapped reached 8,784. Griffo (1957) reported the number of nutria present in Louisiana to have reached 1,000,000 by 1957. By the 1969-70 season 1,604,175 nutria were trapped in Louisiana alone (Lowery, 1974). Presently, they are more important than the muskrat in Louisiana's trapping industry (Whitaker, 1988; Choate et al., 1994)."
http://www.gsmfc.org/nis/nis/Myocastor_coypus.html (Accessed 19 March 2003).

Date of Introduction: 1930's

States Effected: All Gulf of Mexico States http://www.gsmfc.org/nis/nis/Myocastor_coypus.html (Accessed 19 March 2003)

Life History:
"Reproduction and Fecundity: Males are larger than females. Gosling in Doncaster and Micol (1988) reported full grown males to be 15% heavier than females. Breeding occurs throughout the year (Whitaker, 1988; Dagault and Saboureau, 1990; Gosling, 1994). Nutria may reach sexual maturity as young as four months of age, but typically they mature at eight months of age (Lowery, 1974). Nests are made with plant materials and consist of burrows dug into the river bank, or alternatively nests are made in the burrows of other animals, such as in the lodges of beavers and muskrats. Courtship includes a good deal of chasing, fighting and biting. Males use specialized anal scent glands, which become more developed from October through December, to mark their territories (Gosling, 1994). Gestation lasts approximately 130 days, after which 1 to 11 (typically 4-6) young are born fully haired and with their eyes open (Lowery, 1974; O'Neil and Linscombe, 1977; Doncaster and Micol, 1989). Young weigh approximately 225 grams at birth (Nowak, 1991). They swim with their mother and feed on plant matter within 24 hours of birth (Whitaker, 1988). Female nutria have 4-5 pairs of nipples located on the side of their torso, which allow them to suckle their young while swimming or to stand up and watch for predators (Gingerich, 1994). The young are weaned in five to seven weeks (Lowery, 1974; O'Neil and Linscombe, 1977). Females enter estrous in as little as 24 hours after giving birth, otherwise they come into heat every 24 to 26 days, and remain in that state for 1 to 4 days (Lowery, 1974)." http://www.gsmfc.org/nis/nis/Myocastor_coypus.html (Accessed 19 March 2003).

"**Reproductive Mode**
Placental. Sexual. Significant relationship between winter severity and female reproduction in the following spring. Prenatal embryo losses are high until 13-14 weeks of gestation.

Reproductive Output
Mean Litter size (5-6)2-9; prenatal embryo losses are common during cold winter and in females in poor health condition.

Lifecycle Stages
It breeds throughout the year; post-partum oestrus. Sexual maturity 3-10 months. Gestation 127-138 days. Lactation 8 weeks. Potential longevity 6 years." http://www.issg.org/database/species/ecology.asp?si=99&fr=1&sts= (Accessed 19 March 2003).

Growth/Size:
"Wild individuals rarely live more than 3 years, captive individuals may live 6 - 7 years with reports of some captive individuals living as many as 10 years (Nowak, 1991)…. Nutria grow to a total length (including tail) of 140 cm, attaining a weight of 11.4 kg (25 lb) (Whitetaker, 1988). A maximum weight of 17 kg has been reported for the species (Nowak, 1991)."
http://www.gsmfc.org/nis/nis/Myocastor_coypus.html (Accessed 19 March 2003)

Feeding Habits/Diet:
"Nutria feed on almost any terrestrial or aquatic green plants, occasionally also consuming grains (Whitaker, 1988). Preferred plants in marsh areas include three-cornered grass, cattail, bullwhip, and alligator weed, whereas duck-weed appears to be a preferred item in swamp areas (O'Neil and Linscombe, 1977). Roots are another preferred item (Nowak, 1991). Like other rodents, their teeth are

continuously formed from the adjoining tissue throughout their life. Nutria can eat up to 25% of their body weight in plants per day (Gingerich, 1994). Where abundant they may cause severe damage to the vegetation. They often venture into crop fields, also causing considerable damage. Nutria may occupy feeding platforms (5 to 6 feet across) to rest and avoid predation (O'Neil and Linscombe, 1977; Whitaker, 1988). In a manner reminiscent of lagomorphs, nutria re-ingest their fecal pellets to digest food more completely while at rest (Whitaker, 1988)." http://www.gsmfc.org/nis/nis/Myocastor_coypus.html (Accessed 19 March 2003)

"Herbivorous, it eats wetland plants and crops. Selective feeding caused massive reduction in reed swamp. Occasional feeding on freshwater mussels are reported. It practices coprophagy." http://www.issg.org/database/species/ecology.asp?si=99&fr=1&sts= (Accessed 19 March 2003).

Habitat:
"Although they are generally found in freshwater habitats, populations inhabiting brackish and salt waters are known (Nowak, 1991)." http://www.gsmfc.org/nis/nis/Myocastor_coypus.html (Accessed 19 March 2003).

Attitude (aggressive, etc.):
"Where abundant, nutria may deplete wild vegetation in coastal areas, severely damaging wetlands (Trillin, 1995). Nutria often invade crop areas and cause considerable damage especially to rice and sugar cane fields (Ensminger, 1955; Lowery, 1974; O'Neil and Linscombe, 1977; Whitaker, 1988; Gingerich, 1994; Trillin, 1995), with reports of damage to soybean plantations near Mississippi's coast (Wolfe, 1981). Ensminger (1955) summarized extensive damage caused to rice plantations both by direct predation of the rice and by extensive damage to the levees surrounding rice ponds caused by the nutrias burrow digging. In 1957, thousands of nutria were pushed inland by hurricane Audrey. Many invaded sugar cane fields, where they reeked havoc, damaging innumerable plants many of which they did not even consume (Lowery, 1974; Jackson, 1994). Nutria have also been attributed with the decline of muskrat populations in Louisiana (Lowery, 1974; O'Neil and Linscombe, 1977). They have been reported to compete with muskrats and water fowl for trophic resources (Griffo, 1957; Lowery, 1974). Concern has been raised over the abundance of nutria present on some of Mississippi's barrier islands. There, nutria apparently dig up and eat the roots and rhizomes of sea oats, which are of critical importance in stabilizing beach dunes (Wolfe, 1981).

Nutria carry a number of parasites and diseases (Lowery, 1974; Howerth et al., 1994). Disease agents Louisiana nutria carry include *Toxoplasma gondii, Clamidia psittaci, Francisella tularensis, Leptospira sp.,* and encephalomyocarditis virus (Howerth et al., 1994). Parasites recorded from this species include trematodes such as *Heterobilharzia americana, Echinostoma revolutum,* and *Psilostomum sp.*, cestodes such as *Anoplocephala sp.*, acanthocephalans such as *Neoechinorhynchus sp.*, and nematodes such as *Trichostrongylus sigmodontis, Logistriata maldonadoi,* and *Trichuris myocastoris*. In addition, they carry the nematode *Strongyloides myopotami*, which causes a condition known as "marsh itch" or "nutria itch" in people. This is a severe rash often affecting trappers when they handle nutria. It is caused by the larval form of this nematode which penetrates the skin of human beings (Lowery, 1974)." http://www.gsmfc.org/nis/nis/Myocastor_coypus.html (Accessed 19 March 2003).

"This species has been nominated as among 100 of the "World's Worst" invaders."
http://www.issg.org/database/species/ecology.asp?si=99&fr=1&sts= (Accessed 19 March 2003).

Physical Description:
"Nutria are brown in color. They have a long tail which is rounded, scaly and sparsely haired. The muzzle and chin are white and the ears and eyes are small. The incisors are large and dark orange, protruding beyond the lips. The four inner toes of the hind feet are webbed (Whitaker, 1988)." http://www.gsmfc.org/nis/nis/Myocastor_coypus.html (Accessed 19 March 2003).

"Large rodent, superficially rat-like, pelage brown and yellow-brown, cylindrical tail. Webbed hind feet, footprint up to 15 cm long, imprint of web often visible. Feaces cylindrical, up to 70 mm long, with fine longitudinal striations."
http://www.issg.org/database/species/ecology.asp?si=99&fr=1&sts= (Accessed 19 March 2003).

Management Recommendations / Control Strategies: include references for existing site-specific strategies
Management of coypus includes shooting and trapping. Eradication is the management option to be favored with small and medium populations. The eradication campaign in England was achieved using cage traps and employing 24 trappers for 8 years, with a cost £ 2.5 million (Gosling, 1989). http://www.issg.org/database/species/ecology.asp?si=99&fr=1&sts= (Accessed 19 March 2003).

"- Nutria are managed as a furbearer and the harvest is regulated by the establishment of an annual trapping season (November 20 through March 20).
- During the trapping season you can harvest nutria if you are properly licensed ($25 trapping license and have permission from the landowner.
- Since 1987, the LDWF (through the Louisiana Fur and Alligator Advisory Council) has conducted various marketing and education projects in an attempt to increase the demand for nutria pelts.
- In 1995 LDWF, the Louisiana Department of Health and Human Resources (LDHHR) and the Louisiana Department of Agriculture and Forestry (LDAF) established rules and regulations to allow nutria meat to be processed for human consumption.
- The goal of these endeavors is to increase the value of nutria to facilitate a sufficient economic incentive to encourage trappers to harvest more nutria." http://ceris.purdue.edu/napis/a-facts/invasive.html (Accessed 19 March 2003)

Agencies Collecting Data:
The Gulf of Mexico Program
Louisiana Department of Wildlife and Fisheries

Agency Contacts:
See References

References (includes journals, agency/university reports, and internet links):

1. GSMFC - http://www.gsmfc.org/nis/nis/Myocastor_coypus.html
2. ISSG - http://www.issg.org/database/species/ecology.asp?si=99&fr=1&sts=
3. NAPIS - http://ceris.purdue.edu/napis/a-facts/invasive.html
4. TPWD - http://www.nsrl.ttu.edu/tmot1/myoccoyp.htm

Available Mapping Information:
USGS - http://nas.er.usgs.gov/mammals/maps/my_coypus.gif
TPWD – Texas - http://www.nsrl.ttu.edu/tmot1/images/dmap210.jpg